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PROGRESS REPORT #6, MAY 1, 1973

ERTS-1 PROPOSAL NMC NO. 205

CONTRACT NO. NAS 5-21724

TITLE: "Detection and Monitoring Vegetation Damage Associated with  
Highway Facilities" GSFC ID ST 350

BY: E.G. Stoeckeler, Principal Investigator

PROBLEMS:

1. Color composites, B/W 9" x 9" transparencies and prints were ordered from NASA for three scenes on 6 November 1972. To date two color composites of this order have been received.
2. Color composites, B/W 9" x 9" transparencies and prints were ordered from NASA for thirteen additional scenes on 15 March 1973. None of these products have been received to date.
3. Color composites were ordered for five scenes from the General Electric Photo Lab at Beltsville, Maryland, on 8 March 1973. Delivery of these products were promised within a week. None have been received at this writing.
4. Items alluded to in the previous paragraphs have been aired in previous progress reports, both for NMC No. 205 and 203. The necessity of data simulating color infrared photography for the detection of stressed vegetation is well known, especially referring to my previous work using various film/filter combinations for identifying vegetation damage attributed to causes relating to highway facilities. Anything that can be done to expedite my receiving the data in Paragraphs 1 and 2 would be greatly appreciated.

ACCOMPLISHMENTS:

1. While at the ERTS-1 Symposium in early March the writer spent several hours at Building 23 using I<sup>2</sup>S instrumentation with two Maine ERTS scenes obtained on 1 September 1972. About 25 Ektachrome slides of the screen

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were made of various Band-Filter-Intensity combinations. These slides were critically studied for the purpose of detecting vegetation stress in a number of known salt-damaged sites varying in size from one to four acres. The contrast of the image of stressed softwood forests areas was not high in the imagery taken on 1 September. Based on previous photo studies made by the writer the highest contrast was obtained in photos taken in July. Hopefully, some of the coverages between 15 June and 10 August will be cloud free.

PLANNED FOR NEXT PERIOD:

1. U-2 coverage of the Maine Coastal Region obtained on 24 March has not been received to date because of an overload on NASA's photo lab facilities due to the vast coverages taken in connection with flood emergencies in the South and Midwest. Another U-2 underflight is scheduled for the first week in May, weather permitting, or the last week of the month. Arrangements have been made with several other State of Maine agencies to assist in obtaining ground truth and field checks during future underflights and ERTS orbits. Cooperation with other agencies in a wide variety of disciplinary studies not contained in MDOT ERTS-1 proposals is anticipated.

2. With the receipt of color composites and 9" x 9" B/W transparencies referred to in the first three paragraphs it is planned to analyze the products visually and to apply more refined methods including electronic and color additive procedures using (1) the GEMS Facility at Valley Forge, Pennsylvania, (2) the I<sup>2</sup>S Users Facility at GSFC, if this can be arranged, and (3) Spectral Data equipment available at Principal Investigator Al Lind's shop at the University of Vermont.